

Liquid crystal display device and display device

Abstract of the disclosure

5 A color liquid crystal display device is disclosed which is capable of securing sufficient luminance while achieving a high National Television System Committee (NTSC) ratio. Specifically, a liquid crystal display device is disclosed which includes a cold cathode fluorescent light tube as a light source, and a liquid crystal display panel for displaying images by controlling transmission of light from the cold cathode fluorescent light tube. The liquid crystal display panel includes a color filter substrate having color filter layers of red, green and blue, a thin film transistor (TFT) array substrate, and a liquid crystal material filled between 10 the TFT array substrate and the color filter substrate. The cold cathode fluorescent light tube is a tri-phosphor fluorescent light tube, which utilizes $\text{Zn}_2\text{SiO}_4\text{:Mn}$ as a green phosphor. The cold cathode fluorescent light tube and the color filter layers are optimized in a manner that a color reproduction region of the light emitted from the cold cathode fluorescent light tube through the color filter layers has an NTSC ratio of 85% or higher. 15